

Summary

Counts of heterotrophic bacteria and some physiological groups of those microorganisms (amylolytic, lipolytic, proteolytic, caseolytic) were studied in water, soil and on sedge plants (*Carex acutiformis* Ehrb.) in one of larger wetlands near the forester's lodge Stary Dwór, near Olsztyn. The total count of heterotrophic bacteria in the water from the wetland did not overcome 2.3×10^5 CFU cm⁻³; on plants the respective counts were 3.4×10^9 CFU GDW⁻¹ on submerged parts and 1.6×10^9 CFU GDW⁻¹ on aerial leaves. In the soil and on the surface of older roots the counts of heterotrophic bacteria were, respectively, 3.7×10^9 and 1×10^9 CFU GDW⁻¹, whereas on new root the number of bacteria was 2.5×10^{10} CFU GDW⁻¹. Among the physiological groups of heterotrophic bacteria analyzed, amylolytic bacteria were the most numerous. Their maximum counts on the surface of submerged fragments of plants, in soil and on old (from the previous year) roots reached between less than ten million, less than a hundred million and more units. Lipolytic and proteolytic bacteria were present in smaller numbers; they only sporadically reached between less than ten million or less than a hundred million CFU GDW⁻¹. The differences in the counts of the physiological groups of heterotrophic bacteria in water and on different plant fragments between the two studied sites were small and never exceeded one order of value. The results suggest that microbiological mineralization of organic contents in wetland occurs mostly at the borderline of water and plant phases.